REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed May 15, 2009. Claims 1-29 are pending in the present application. Reconsideration and allowance of the application and pending claims are respectfully requested.

1. Response to Rejections of Claims under 35 U.S.C. § 112

Claims 1, 6-8, 11, 18-19, 22-23, and 25 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Accordingly, independent claims 1 and 22 have been amended to overcome the rejection, and Applicants respectfully request withdrawal of the rejection.

2. Response to Rejections of Claims under 35 U.S.C. § 101

Claims 1-19 have also been rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. The Office Action states that the claims do not fall into a statutory category of invention by not 1) being tied to another statutory category (such as a particular apparatus) or 2) transforming underlying subject matter to a different state or thing. In response, independent claim 1 has been amended to recite that the receiving, queuing, and controlling steps occur at a local process executed by a computer. Therefore, the claimed methods are tied to a particular apparatus. Withdrawal of the rejection of claims 1-19 is respectfully requested.

Additionally, claims 20-21 have been rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. In response, independent claim 20 has been amended to recite that the computer executes the computer code to perform the recited method. Accordingly, withdrawal of the rejection of claims 20-21 is respectfully requested.

3. Response To Rejections of Claims Under 35 U.S.C. § 103

Claims 1-8 and 16-21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Roque* (U.S. Patent Publication No. 2002/0186687 A1) in view of *Thompson* (U.S. Patent Publication No. 2002/0018462 A1). Claims 9-12 and 14-15 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Roque* in view of *Thompson* in further view of *Performance Technologies* ("Tutorial: Interworking Switched Circuit and Voice-over-IP Networks," August 22, 2001). Claims 13 and 22-29 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Roque* in view of *Thompson* in further view of *Performance Technologies* in further view of *Suzuki* (U.S. Patent Publication No. 2002/0156925 A1).

a. Claim 1

As provided in independent claim 1, Applicants claim:

> A method of controlling a local process that forms part of a first processing entity, said first processing entity maintaining a plurality of associations with a plurality of remote processes in a second processing entity, said method comprising the steps of:
>
> - receiving at a computer executing the local process a failure message from a remote process indicating a fault affecting an association linking the local process with that remote process, wherein the plurality of associations comprise transport connections between respective local processes and remote processes;
> - queuing, at the computer executing the local process, data messages destined for that remote process;
> - ***controlling the transmission of an acknowledgement of the failure message at the computer executing the local process so that data messages pending on the association are received at that remote process before the acknowledgment of the failure message; and***
> - ***initiating a traffic diversion to set up an alternate path between said local process of said first processing entity and said second processing entity for queued data messages by avoiding the failed association***.

(Emphasis added).

Applicants respectfully submit that independent claim 1 is allowable for at least the reason that *Roque* in view of *Thompson* does not disclose, teach, or suggest at least "controlling the transmission of an acknowledgement of the failure message at the

computer executing the local process so that data messages pending on the association are received at that remote process via an alternative path before the acknowledgment of the failure message" and "initiating a traffic diversion to set up the alternate path between said local process of said first processing entity and said second processing entity for queued data messages by avoiding the failed association," as emphasized above.

For example, *Roque* describes a process for an application server process (ASP) to manage a withdrawal of service by a signalling gateway process (SGP). In this process, an SGP may send a "set of messages that will convey SGP state maintenance and SGP traffic maintenance events . . . related to an SGP . . . to an ASP." Para. 0201. The ASP may also send notifications related to a status of a Signalling Gateway (SG) (including SGPs for the SG) to the SGPs that serve the SG. *See* para. 0218. Accordingly, *Roque* discloses the conveying of a status of an SGP, such as whether an SGP is down or inactive. For example, *Roque* states:

> [0385] When an ASP (e.g.: ASP-X) receives an SGPIA or an SGPDOWN message from an SGP (e.g.: SGP-A), first, if its status was "SGP_ACTIVE" it has to stop traffic (signaling traffic messages) towards such SGP and do not expect receive any traffic (signaling traffic messages) coming from such SGP.
>
> [0386] Then, after updating the status for the sending SGP and updating, if proceeds, the status of the affected SG(s), the receiving ASP will have to fetch in the storing means (64) an alternative SGP (e.g.: SGP-C) that is currently serving, or can serve, the SG(s) that became unattended by the sending SGP (SGP-A).
>
> [0387] If such alternative SGP is found and its status is "SGP_ACTIVE", then such SGP shall, from now, be used for signaling traffic messages related to such affected SG(s).
>
> [0388] Otherwise, the sending of signaling traffic messages related to the affected SG(s) is temporarily stopped until the receiving ASP (ASP-X) starts and complete an activation procedure towards one (or more) alternative SGP(s) that can serve traffic related to the affected SG(s) (i.e.: SGP(s) that are configured to serve such SG(s) that became unattended).

As such, the disclosure of *Roque* is not directed to "controlling the transmission of an acknowledgement of the failure message at the computer executing the local process so that data messages pending on the association are received at that remote process via an alternative path before the acknowledgment of the failure message" and "initiating a traffic diversion to set up the alternate path between said local process of said first processing entity and said second processing entity for queued data messages by avoiding the failed association," as recited in claim 1.

For example, *Roque* does not disclose that queued or pending data messages are diverted or that an acknowledgement of the failure message is controlled so that data messages pending on the association are received at a remote process before an acknowledgment of a failure message.

Further, *Thompson* describes a wireless telecommunication system, where:

> [0005] Each subscriber terminal communicates with the central terminal via a radio resource. In accordance with known techniques, multiple communication channels may be arranged to utilise the radio resource for the transmission of signals to and from the subscriber terminal.
>
> . . .
>
> [0018] Preferably, the packet controller maintains a record for the subscriber terminal identifying the packet group communication channels being monitored by the subscriber terminal, each time the channels message is sent by the subscriber controller, the packet controller being arranged to update that record, and the queue manager being arranged to reference the record when determining in to which queue to place a data packet destined for the subscriber terminal.
>
> [0019] This enables the queue manager on an ongoing basis to take account of the communication channels being monitored by the subscriber terminal when deciding into which queue to place any data packet destined for that subscriber terminal. However, this in itself will not facilitate any corrective action for data packets already in a queue for a communication channel at the time the subscriber terminal informs the packet controller that it is no longer going to monitor that communications channel. If the protocol being used by the subscriber terminal for handling data packets on receipt is robust enough, one approach may be to take no such corrective action, in which case any data packets already in the queue for a communication channel at the time the subscriber terminal indicates it is no longer going to listen to that communication channel will

not be received by the subscriber terminal, and instead the retransmission of those data packets will need to be requested. An alternative approach, which would require the subscriber terminal's actions to be dependent upon receiving an acknowledgement message from the packet controller, is to delay issuance of the acknowledgement message from the packet controller until the contents of the queue for the relevant communications channel (at the time the channels message was received by the packet controller) have been transmitted.

[0020] However, in preferred embodiments, if the channels message from the subscriber controller specifies a reduced number of communication channels, the packet controller causes the queue manager to review the contents of the queues and to redistribute into an appropriate queue any data packets for the subscriber terminal placed in queues for communications channels no longer being monitored by the subscriber terminal. By this approach, the queue manager is able to retrieve data packets from any particular queue and place them on to another queue, thereby ensuring that the subscriber terminal will continue to receive any data packets destined for it.

The Office Action contends that the foregoing passages of *Thompson* demonstrate that *Thompson* teaches sending a failure message and diverting data packets to another queue when a failure occurs. Page 7. As stated above, *Thompson* describes a packet controller being informed that the subscriber terminal is not going to monitor a communication channel and delay issuance of an acknowledgment until contents of a queue for the communication channel is transmitted to the subscriber terminal. Accordingly, this approach is not synonymous with "controlling the transmission of an acknowledgement of the failure message at the computer executing the local process so that data messages pending on the association are received at that remote process via an alternate path before the acknowledgment of the failure message" and "initiating a traffic diversion to set up the alternate path between said local process of said first processing entity and said second processing entity for queued data messages by avoiding the failed association," as recited in claim 1, since a a message about whether a communication channel is being monitored is not the same as a failure message and since the contents in the queue in *Thompson* are not diverted using an alternative path, among other reasons.

In another approached described above, *Thompson* discloses that a packet controller "causes the queue manager to review the contents of the queues and to

redistribute into an appropriate queue any data packets for the subscriber terminal placed in queues for communications channels no longer being monitored by the subscriber terminal." Therefore, *Thompson* describes that data packets originally to be transmitted by a queue of one process are redistributed to a queue of another process and then transmitted. As such, traffic diversion is not initiated such that an alternative path is established from the local process whose association has failed in *Thompson*. Rather, a path is established from another process whose association has not failed. Accordingly, *Thompson* does not remedy the deficiencies of *Roque* by disclosing "controlling the transmission of an acknowledgement of the failure message at the computer executing the local process so that data messages pending on the association are received at that remote process via an alternate path before the acknowledgment of the failure message" and "initiating a traffic diversion to set up the alternate path between said local process of said first processing entity and said second processing entity for queued data messages by avoiding the failed association," as recited in claim 1.

Therefore, claim 1 is patentable over *Roque* in view of *Thompson*, and withdrawal of the rejection is respectfully requested.

b. Claims 2-21

For at least the reasons given above, claim 1 is allowable over the cited art of record. Since claims 2-8 and 16-21 depend from and include the features of claim 1 and recite additional features, claims 2-8 and 16-21 are allowable as a matter of law over the cited art.

Performance Technologies fails to remedy the deficiencies of *Roque* and *Thompson* with respect to independent claim 1. Therefore, since claims 9-12 and 14-15 depend from and include the features of claim 1 and recite additional features, claims 9-12 and 14-15 are allowable as a matter of law over the cited art.

As an example, claim 9 describes that an alternative local process to the same remote process is provided when a pending message is determined to form part of a stateful transaction. Diversely, *Roque* describes that an alternative signaling gateway process is designated and does not disclose that an alternative local process may be

provided to a same remote process (*e.g.*, signaling gateway process in accordance with the Examiner's construction of "remote process").

Suzuki fails to remedy the deficiencies of *Roque*, *Thompson*, and *Performance Technologies* with respect to independent claim 1. Therefore, since claim 13 depends from and includes the features of claim 1 and recites additional features, claim 13 is allowable as a matter of law over the cited art.

c. Claim 22

As provided in independent claim 22, Applicants claim:

> A method of recovering failure in a distributed signalling gateway maintaining a plurality of associations between signalling gateway processes of said distributed signalling gateway and application server processes of an application server, said method comprising the steps of:
>
> - initiating a traffic diversion in response to a failure message to set up an alternate path between said signalling gateway processes and said application server processes in case of fault affecting an association;
>
> - initiating a switch back to include a new association linking a signalling gateway process and an application server process, each application server process being connected to each signalling gateway process through the association, wherein the association comprises a transport connection between respective signalling gateway process and application server process;
>
> - ***according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes; and***
>
> ***- distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables***.

(Emphasis added).

Applicants respectfully submit that independent claim 22 is allowable for at least the reason that *Roque* in view of *Thompson* in further view of *Performance Technologies* in further view of *Suzuki* does not disclose, teach, or suggest at least "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway

to said plurality of application server processes according to said routing tables," as emphasized above.

For example, *Roque* describes a process for an application server process (ASP) to manage a withdrawal of service by a signalling gateway process (SGP). In this process, an SGP may send a "set of messages that will convey SGP state maintenance and SGP traffic maintenance events . . . related to an SGP . . . to an ASP." Para. 0201. The ASP may also send notifications related to a status of a Signalling Gateway (SG) (including SGPs for the SG) to the SGPs that serve the SG. *See* para. 0218. As such, the disclosure of *Roque* is not directed to routing data messages received by a signaling gateway to an application server. Rather, *Roque* describes that the status information for a SG is the basis used to route traffic from an ASP to a SG. *See* para. 0252. Accordingly, *Roque* fails to teach or suggest "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables," as recited in claim 22.

Further, *Thompson* describes a wireless telecommunication system, where:

> [0005] Each subscriber terminal communicates with the central terminal via a radio resource. In accordance with known techniques, multiple communication channels may be arranged to utilise the radio resource for the transmission of signals to and from the subscriber terminal.
>
> . . .
>
> [0018] Preferably, the packet controller maintains a record for the subscriber terminal identifying the packet group communication channels being monitored by the subscriber terminal, each time the channels message is sent by the subscriber controller, the packet controller being arranged to update that record, and the queue manager being arranged to reference the record when determining in to which queue to place a data packet destined for the subscriber terminal.
>
> [0019] This enables the queue manager on an ongoing basis to take account of the communication channels being monitored by the subscriber terminal when deciding into which queue to place any data packet destined for that subscriber terminal. However, this in itself will not facilitate any corrective action for data packets already in a queue for a

> communication channel at the time the subscriber terminal informs the packet controller that it is no longer going to monitor that communications channel. If the protocol being used by the subscriber terminal for handling data packets on receipt is robust enough, one approach may be to take no such corrective action, in which case any data packets already in the queue for a communication channel at the time the subscriber terminal indicates it is no longer going to listen to that communication channel will not be received by the subscriber terminal, and instead the retransmission of those data packets will need to be requested. An alternative approach, which would require the subscriber terminal's actions to be dependent upon receiving an acknowledgement message from the packet controller, is to delay issuance of the acknowledgement message from the packet controller until the contents of the queue for the relevant communications channel (at the time the channels message was received by the packet controller) have been transmitted.
> [0020] However, in preferred embodiments, if the channels message from the subscriber controller specifies a reduced number of communication channels, the packet controller causes the queue manager to review the contents of the queues and to redistribute into an appropriate queue any data packets for the subscriber terminal placed in queues for communications channels no longer being monitored by the subscriber terminal. By this approach, the queue manager is able to retrieve data packets from any particular queue and place them on to another queue, thereby ensuring that the subscriber terminal will continue to receive any data packets destined for it.

The Office Action contends that the foregoing passages of *Thompson* demonstrate that *Thompson* teaches sending a failure message and diverting data packets to another queue when a failure occurs. Page 7. As stated above, *Thompson* describes a packet controller being informed that the subscriber terminal is not going to monitor a communication channel and delaying issuance of an acknowledgment until contents of a queue for the communication channel is transmitted to the subscriber terminal. Accordingly, this approach is not synonymous with "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables," as recited in claim 22.

In another approached described above, *Thompson* discloses that a packet controller "causes the queue manager to review the contents of the queues and to redistribute into an appropriate queue any data packets for the subscriber terminal placed in queues for communications channels no longer being monitored by the subscriber terminal." Therefore, *Thompson* describes that data packets originally to be transmitted by a queue of one process are redistributed to a queue of another process and then transmitted. As such, messages are not assured of being distributed sequentially after being moved to a new queue and routing tables are not maintained in *Thompson*. Accordingly, *Thompson* does not remedy the deficiencies of *Roque* by disclosing "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables," as recited in claim 22.

Also, *Performance Technologies* describes the interworkings of a public switched telephone network and voice-over-Internet Protocol (VoIP) network. *Performance Technologies* does not disclose that queued or pending data messages are diverted or that an acknowledgement of the failure message is controlled so that data messages pending on the association are received at a remote process before an acknowledgment of a failure message. Therefore, *Performance Technologies* individually or in combination with *Roque* and *Thompson* fails to teach or suggest at least "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables," as emphasized above," as recited in claim 22.

Further, *Suzuki* describes the registration of a gateway or an agent when one is added to a network and signaling that may occur between a signaling gateway and a call agent. *Suzuki* does not disclose that queued or pending data messages are diverted or that an acknowledgement of the failure message is controlled so that data messages pending on the association are received at a remote process before an

acknowledgment of a failure message. Therefore, *Suzuki* individually or in combination with *Roque*, *Thompson*, and *Performance Technologies* fails to teach or suggest at least "according to the change of status of any association, updating routing tables capable of routing data messages received by said signalling gateway processes to its destined application server processes" and "distributing sequentially messages from said signalling gateway to said plurality of application server processes according to said routing tables," as emphasized above," as recited in claim 22.

Therefore, claim 22 is patentable over *Roque* in view of *Thompson* in further view of *Performance Technologies* in further view of *Suzuki*, and withdrawal of the rejection is respectfully requested.

b. Claims 23-29

For at least the reasons given above, claim 22 is allowable over the cited art of record. Since claims 23-29 depend from and include the features of claim 22 and recite additional features, claims 23-29 are allowable as a matter of law over the cited art.

As an example, claim 23 describes "finding alternate path to forward subsequent stateless processing messages onto another application server process through another association or to forward subsequent stateful processing messages through an alternate signalling gateway process still associated with the same application server process." Diversely, *Roque* describes that an alternative signaling gateway process is designated and does not disclose that a different forwarding operations may be performed based on the stateless or stateful nature of processing messages. Accordingly, the subject matter of claim 23 is not taught by the cited art.

CONCLUSION

For at least the reasons set forth above, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned agent at (770) 933-9500.

Respectfully submitted,

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